

Title (en)  
SPARK AND DWELL IGNITION CONTROL SYSTEM USING DIGITAL CIRCUITRY.

Title (de)  
EINE DIGITALE SCHALTUNG VERWENDENDEN FUNKENZÜNDUNGS-STEuersYSTEM.

Title (fr)  
SYSTEME DE COMMANDE D'ALLUMAGE UTILISANT UN CIRCUIT NUMERIQUE.

Publication  
**EP 0029853 A4 19811027 (EN)**

Application  
**EP 80901299 A 19801230**

Priority  
US 4901679 A 19790615

Abstract (en)  
[origin: US4231332A] A digital spark and dwell ignition control system is disclosed. Maximum advance and reference sensors are utilized to determine positions of maximum and minimum possible advance for spark ignition with respect to the position of the engine crankshaft. For each maximum advance sensor pulse a main counter starts sequentially counting clock pulses wherein the maximum count obtained by the counter is related to engine crankshaft speed. The count of the main counter is utilized by a dwell circuit to determine the time prior to the maximum advance pulse at which spark coil excitation should occur. The main counter count also determines several inputs to a read only memory (ROM) circuit whose output controls a rate multiplier. The rate multiplier receives input clock signals and provides selective frequency division for these clock signals in accordance with the ROM output. The output of the rate multiplier is coupled to an accumulator means, preferably a series of counters, which provides an accumulated count corresponding to the rate multiplier output. The accumulated count is utilized to determine the occurrence of spark ignition. Pulse width modulation circuitry receives an analog signal related to the amount of sensed engine vacuum pressure and produces a corresponding periodic digital two state signal which has a duty cycle related to the magnitude of the analog vacuum signal. The periodic two state digital signal is coupled as an input to the ROM which controls the rate multiplier means. In this manner the accumulator count is made to depend upon the magnitude of the analog vacuum signal while a minimum amount of ROM storage space is utilized.

IPC 1-7  
**F02P 5/04**

IPC 8 full level  
**F02P 3/045** (2006.01); **F02P 3/04** (2006.01); **F02P 5/04** (2006.01); **F02P 5/15** (2006.01)

CPC (source: EP US)  
**F02P 3/0456** (2013.01 - EP US); **F02P 5/15** (2013.01 - EP US); **Y02T 10/40** (2013.01 - EP US)

Citation (search report)  
US 3483364 A 19691209 - LEESON JAMES L JR

Designated contracting state (EPC)  
DE FR GB SE

DOCDB simple family (publication)  
**US 4231332 A 19801104**; BR 8008712 A 19810414; CA 1142574 A 19830308; EP 0029853 A1 19810610; EP 0029853 A4 19811027; IT 1130788 B 19860618; IT 8022803 A0 19800613; JP S56500750 A 19810604; MX 148230 A 19830328; WO 8002861 A1 19801224; ZA 803114 B 19810527

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**US 4901679 A 19790615**; BR 8008712 A 19800602; CA 353278 A 19800603; EP 80901299 A 19801230; IT 2280380 A 19800613; JP 50151580 A 19800602; MX 18275880 A 19800613; US 8000703 W 19800602; ZA 803114 A 19800523